

Date: Wednesday, 05/07/2006 7:45:31 AM
 User: Linda Lacelle

Process Sheet

Customer	: CU-DAR001 Dart Helicopters Services	Drawing Name	: SADDLE BILLET (6061)
Job Number	: 27814		
Estimate Number	: 12482		
P.O. Number	: N/A	Part Number	: D6102013
This Issue	: 05/07/2006 S.O. No. : N/A	Drawing Number	: D6102 PRELIMINARY
Prsht Rev.	: NC	Project Number	: N/A
First Issue	: N/A Type : PURCHASED PARTS	Drawing Revision	: PREL
Previous Run	: N/A	Material	: N/A
Written By	: <u>SEE COMMENT BELOW</u>	Due Date	: 25/07/2006 Qty: 30 Um: Each
Checked & Approved By	: <u>[Signature]</u>		
Comment	: Est Rev:A New Issue 06-07-03 JLM		

Additional Product

Job Number:



Seq. #:	Machine Or Operation:	Description :
---------	-----------------------	---------------

1.0

PG

PURCHASING

Comment: Issue P/O: 1605

- a) Description: Aluminum Billet
 b) 7.000" x 6.500" x 2.000" thick
 c) Tolerance on all dimensions is +0.06/0.00
 d) Grain direction along 6.500" length
 e) Material: 6061-T6/T6511 (QQ-A-250/11 or QQ-A-200/8)
 Material release certificate is required

C207105/04

(30)

2.0

D6102013P

6061-T6 7.0x6.5x2.0



Comment: Qty.: 1.0000 Each(s)/Unit Total: 30.0000 Each(s)
 6061-T6 6.0x11.0x5.0

3.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1
 Receive & Inspect For Transit Damage
 Ensure material certification is attached

RCD 4/7/13

4.0

QC6

DIMENSIONAL CHECK



Comment: DIMENSIONAL CHECK
 Check certification to Dwg D6102 for compliance

BSC 06-07-07

30

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Mfg / Design Mgr	Approval QC Inspector

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Design Mgr	Approval QC Inspector
			Initial Design Mgr	Action Description Design Mgr	Sign & Date			

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes ☒ No ☐ DQA: ☒ Date: 06/07/04

NOTE: Date & initial all entries

QA: N/C Closed: _____ Date: _____

Date: Wednesday, 05/07/2006 7:45:31 AM
User: Linda Lacelle

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: SADDLE BILLET (6061)

Job Number: 27814

Part Number: D6102013

Job Number:



Seq. #:

Machine Or Operation:

Description :

5.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Identify and Stock

Location: CNC

BC 06-07-17

30

6.0

DC

DOCUMENT CONTROL



Comment: DOCUMENT CONTROL

Inspection Level 21

06.07.17

Job Completion



U 06-07-17

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Mfg / Design Mgr	Approval QC Inspector

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Design Mgr	Approval QC Inspector
			Initial Design Mgr	Action Description Design Mgr	Sign & Date			

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

NOTE: Date & initial all entries

QA: N/C Closed: _____ Date: _____

COPPER AND BRASS SALES

MATERIAL TYPE ALUMINUM ALLOYS

PRODUCT DESIGNATION

1100 1350 3003 3004 3105 5005 5083 5086 5182 5454 6061 6063

"WARNING"

SMALL CHIPS, FINE TURNINGS AND DUST MAY IGNITE READILY. EXPLOSION POTENTIAL MAY BE PRESENT WHEN: DUST OR FINES ARE DISPERSED IN THE AIR; FINE, DUST OR MOLTEN ALUMINUM ARE IN CONTACT WITH CERTAIN METAL OXIDES; OR, CHIPS, FINES, DUST OR MOLTEN ALUMINUM ARE IN CONTACT WITH WATER OR MOISTURE. KEEP AWAY FROM IGNITION SOURCE. USE EXPLOSION-PROOF VENTILATION. KEEP MATERIAL DRY.

INHALING LARGE AMOUNTS OF COPPER, MAGNESIUM OXIDE, MANGANESE OXIDE, AND ZINC OXIDE FUMES OR DUST MAY CAUSE METAL FUME FEVER WITH FLU-LIKE SYMPTOMS. CHRONIC OVEREXPOSURE TO COPPER MAY CAUSE THICKENING OF THE SKIN; AND SKIN, TEETH, AND HAIR DISCOLORATION. CHRONIC OVEREXPOSURE TO MANGANESE DUST CAN CAUSE CENTRAL NERVOUS SYSTEM DAMAGE, SCARRING OF THE LUNGS AND REPRODUCTIVE HARM IN MALES. TARGET ORGAN IS PRIMARILY THE LUNG, BUT REPEATED HIGH EXPOSURE CAN ALSO AFFECT THE LIVER. CHRONIC OVEREXPOSURE TO TIN DUST OR IRON OXIDE DUST/FUME MAY CAUSE LUNG SIDEROSIS. CHRONIC OVEREXPOSURE TO SILICON DUST CAN CAUSE CHRONIC BRONCHITIS.

THIS PRODUCT ALSO CONTAINS LEAD AND CHROMIUM COMPOUNDS. LEAD IS KNOWN TO CAUSE REPRODUCTIVE TOXICITY AND IS A KNOWN CARCINOGEN. EXPOSURE TO CHROMIUM DUST OR FUME MAY CAUSE METAL FUME FEVER WITH FLU-LIKE SYMPTOMS AND KIDNEY AND LIVER DAMAGE. UNDER HIGH TEMPERATURES, HEXAVALENT CHROMIUM MAY BE PRODUCED, IF IN THE INSOLUBLE FORM, IT IS A CONFIRMED HUMAN CARCINOGEN. (CALIFORNIA PROPOSITION 65)

IF COATED WITH OIL, MAY CAUSE SKIN IRRITATION/DERMATITIS BY CONTACT. WELDING FUME IS LISTED AS A POSSIBLE CARCINOGENIC TO HUMANS.

READ THE ALUMINUM/ALUMINUM ALLOYS MATERIAL SAFETY DATA SHEET(MSDS) ON FILE WITH YOUR EMPLOYER BEFORE WORKING WITH THIS MATERIAL

- * If processing or recycling produces particulate, use exhaust ventilation or other controls designed to prevent exposure to workers. Examples of such activities include melting, welding, grinding, abrasive sawing, sanding and polishing. Any activity which abrades the surface of this material can generate airborne particulate. Use respiratory protection (P100, quantitative fit testing required) if exposures exceed the permissible limits.
- * The Occupational Safety and Health Administration (OSHA) have set mandatory limits on occupational exposures.
- * Aluminum, in solid form and as contained in finished products presents no special health risk.
- * Sold for manufacturing purposes only. This product can be recycled; contact your sales representative.

The Occupational Safety and Health Administration require employers to provide training in the proper use of this pro

For additional information, call or write to Copper and Brass Sales, 22355 West Eleven Mile Road, Southfield, MI 48033, telephone 248-233-5600, or visit our web site @ www.copperandbrass.com.

CERTIFIED INSPECTION REPORT

Alcoa Inc.

PITTSBURGH, PA DAVENPORT WORKS

Ship From: RIVERDALE, IA.

We hereby certify that the material covered by this certificate has been inspected with, and has been found to meet, the applicable requirements described therein, including any specifications forming a part of the description and that samples representative of the material met the composition limits and had the mechanical properties shown on the face of this sheet.

Mark J. Vrabec

Mark J. Vrabec
Director of Manufacturing Davenport Works

Kenton P. Young

Kenton P. Young
Quality Assurance Manager

481162	238074			
Ship Date	B.L. No.	Invoice No.	Alcoa No.	Item
2005-08-31	82446	B0148	DS-90362-1	
P.O. No./Govt Contract No.	Customer			
CG3239	C&B-ELKHART IND			

Ship To: COPPER AND BRASS SALES INC
58144 CHARLOTTE AVENUE
ELKHART, IN 46517

Item Description

2.0000 IN TK X 72.500 IN W X 144.500 IN LN CAT D 164098 (N) A/T 6061-
T651 TYPE 200 WROUGHT TOOLING PLATE MILL FINISH, SAWED {{ P/N 090085-
211. PER AMS-QQ-A-250/11 & EXCEPT
MARKING AMS4027-REV M & EXCEPT MARKING
ASTMB209 REV 04 & EXCEPT MARKING ASME-SB-209
REV A99 DIMENSIONAL TOLERANCES F
ANSIH35.2 REV 2003 ((MARKED))
INTERLEAVED SKID WGT: 4500 LB QUAN TOL +/-10
% CQR D164098 REV 12 CUST REQ 05-08-
31 *** W/E 05-09-03 ***

Num	Package Ticket	Lot	Weight	Quantity	UOM	Pc Id/Serl
1	298700	446531	2107	1	PC	
2	298714	446531	2093	1	PC	
3	298734	446532	2104	1	PC	
4	298747	446531	2087	1	PC	
5	298760	448424	2101	1	PC	
6	300124	446524	2099	1	PC	
7	300132	446524	2097	1	PC	
8	300150	446522	2099	1	PC	
9	300288	446524	2100	1	PC	
10	300613	439053	2095	1	PC	
			20982	10		

Notes for CQR: D164098.12

PRODUCT PRODUCED AND MARKED TO THE REQUIREMENTS OF AMS-QQ-A-250/11 ALSO MEETS THE REQUIREMENTS OF QQ-A-250/11F. PRODUCT PRODUCED AND MARKED TO THE REQUIREMENTS OF QQ-A-250/11F ALSO MEETS THE REQUIREMENTS OF AMS-QQ-A-250/11.

CQR: D164098.12 -Specification Limits

		UTS	TYS	EL4D
Tmpr	Dir	KSI	KSI	PCT
T651	Long Transv.	Max		
		Min	42.0	35.0
				8

CERTIFICATION

SOLD TO: _____
DATE: _____
CUSTOMER P.O.: _____
CUSTOMER PN: _____
ATTN: _____
QUANTITY: 4 pcs
BY: _____
THYSSEN COPPER & BRASS SALES INC.

SEP 01 2005

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Mark J. Vrablec

Mark J. Vrablec
Director of Manufacturing Davenport Works

Kenton P. Young

Kenton P. Young
Quality Assurance Manager

481162
Ship Date

238074
B.L. No.

Invoice No.

Alcoa No. Item

Page

2005-08-31

82446

30148

DS-90362-1

P.O. No./Govt Contract No.

Customer

CG3239

C&B-ELKHART IND

CQR: D164098.12 -Specification Limits (cont.)

Chemical Composition		SI	FE	CU	MN	MG	CR	ZN	TI	Other	
										Each	Total Aluminum
Alloy 6061	Max	.8	.7	.40	.15	1.2	.35	.25	.15	.05	.15
	Min	.40		.15		.8	.04				REMAIN

Lot: 439053 -Mechanical, Physical, Metallography, Quantometer Results

Tmpr	Dir	No.	Test	UTS	TYS	EL4D	Chemical						
							SI	FE	CU	MN	MG	CR	ZN
T651	Long Transv.	7	Max	50	45.9	14.2							
			Min	49.7	45.7	13.8							
Cast Number													
H2093014			Actuals	.63	.4	.26	.06	1.0	.19	.06	.02		

Lot: 446522 -Mechanical, Physical, Metallography, Quantometer Results

Tmpr	Dir	No.	Test	UTS	TYS	EL4D	Chemical						
							SI	FE	CU	MN	MG	CR	ZN
T651	Long Transv.	7	Max	49.6	44.1	13.9							
			Min	48.4	43.3	12.2							
Cast Number													
05P00791			Actuals	.63	.4	.26	.02	1.0	.20	.01	.03		

Lot: 446524 -Mechanical, Physical, Metallography, Quantometer Results

Tmpr	Dir	No.	Test	UTS	TYS	EL4D	Chemical						
							SI	FE	CU	MN	MG	CR	ZN
T651	Long Transv.	7	Max	48.5	43.2	12.7							
			Min	47.8	42.3	9.8							
Cast Number													
05P00793			Actuals	.63	.4	.26	.02	1.0	.20	.01	.03		

CERTIFIED INSPECTION REPORT

Alcoa Inc.

PITTSBURGH, PA DAVENPORT WORKS

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Mark J. Vrabie

Mark J. Vrabie
Director of Manufacturing Davenport Works

Kenton P. Young

Kenton P. Young
Quality Assurance Manager

481162	238074			
<u>Ship Date</u>	<u>B.L. No.</u>	<u>Invoice No.</u>	<u>Alcoa No. Item</u>	Page
2005-08-31	82446	30148	DS-90362-1	
<u>P.O. No./Govt Contract No.</u>		<u>Customer</u>		
CG3239		C&B-ELKHART IND		

Lot: 446531 -Mechanical, Physical, Metallography, Quantometer Results -----

	No.	UTS	TYS	EL4D
Temp Dir	Test	KSI	KSI	PCT
T651 Long Transv.	7	Max 49.9	45.6	14.1
		Min 49.4	44.9	12.7
Cast Number	Chemical	SI	FE	CU MN MG CR ZN TI
05R00754	Actuals	.64	.5	.27 .01 1.0 .19 .01 .03

Lot: 446532 -Mechanical, Physical, Metallography, Quantometer Results -----

	No.	UTS	TYS	EL4D
Temp Dir	Test	KSI	KSI	PCT
T651 Long Transv.	7	Max 50.2	46.1	13.8
		Min 48.6	44.4	10.8
Cast Number	Chemical	SI	FE	CU MN MG CR ZN TI
05P00802	Actuals	.63	.5	.25 .01 0.9 .18 .01 .02

Lot: 448424 -Mechanical, Physical, Metallography, Quantometer Results -----

	No.	UTS	TYS	EL4D
Temp Dir	Test	KSI	KSI	PCT
T651 Long Transv.	7	Max 50.1	46.5	15
		Min 50	46.3	13
Cast Number	Chemical	SI	FE	CU MN MG CR ZN TI
H2093021	Actuals	.63	.4	.26 .08 1.0 .19 .04 .02



INSPECTION CERTIFICATE № 05.4549



EN-10204 3.1-B

Consigner: Kamensk Uralsky Metallurgical Works, JSC., 5, Zavodskaya St., Kamensk Uralsky Sverdlovsk Region, 623405 Russia fax: (007) 3439-39-56-20			Shipping Date: 13.02.05		
Consignee: Thyssen TMX Division			Plant Order №: 2351		
Contract number N5561-S CA8669/ 090085-2 (V)			Quantity: 4		
Our Order №:			Weight, kg.: 3128		
Description of Goods: Plates			Specification №: N5561		
Temper of Alloy			Lot №: 1		
Grade of Product			Package №: 200406, 200407		
Dimensions, Inch/mm			Requirements on the Products:		
T651			Material conforms to quality of alloy: 6061 T651		
2"X60.5"X144.5" 50.800X1536.7X3670.3			Product conforms to all requirements of: AMS 4027M, AMS-QQ-A250/11F, ASTM B209-04		

Mechanical Properties

The Condition of Tested Standards	Batch Number	Cast Number	Number of Tests	Tensile Strength		Yield Strength (0.2% offset)		Elongation, %		Hardness, HB
				ksi	ksi	ksi	ksi	min	max	
Required				min	max	min	max	min	max	
	61617	12-3729	4	42.0	-	35.0	-	8.0	-	-
				44.8	45.9	40.0	40.9	11.5	13.0	-

Chemical Composition, %

Element	Silicon Si	Iron Fe	Copper Cu	Manganese Mn	Magnesium Mg	Chromium Cr	Nickel Ni	Zinc Zn	Titanium Ti	Zirconium Zr
Required	0.40-0.80	0.700	0.15-0.40	0.15	0.80-1.20	0.04-0.35	-	0.25	0.15	-
Contents	0.58	0.200	0.20	0.06	1.00	0.06	-	0.03	0.08	-

Element	Ti+Zr	Na	Tin Sn	Bismuth Bi	Plumbum Pb	Mn+Cr	Ce	Other Elements		Al
Required	-	-	-	-	-	-	-	Each	Total	
Contents	-	-	-	-	-	-	-	0.05	0.15	remainder
	-	-	-	-	-	-	-	0.05	0.15	remainder

Other Tests

Method	Macro-structure	Micro-structure	USI	Electro-conductivity	Contents H2 of metals cm3/100gr	Mercury - Free
Result	-	-	-	-	-	

On behalf:

Date:

Inspector:

Inspection Department engineer

KUMW, JSC

13.02.05

N. Strahova

V. Alekhina

CERTIFICATION

SOLD TO:

DATE:

CUSTOMER P.O.:

CUSTOMER PN:

ATTN: QA

QUANTITY: 4 pcs

BY: Blue

THYSSSEN COPPER & BRASS SALES INC.

MAY 10 2005

Alcan Aluminium Valais SA

CH-3960 Sierre
Suisse

ALCAN ROLLED PRODUCTS

Tel : +41(0) 27 457 51 11
www.alcan.com



PECHINEY WORLD TRADE USA

333 LUDLOW STREET
US -06902 STAMFORD

INSPECTION CERTIFICATE

According To **EN 10204-3.1**
Disp. Advice / Cert **0080138811**
Date **22/03/2006** Page **1**

Your Order **Copper and Brass Sal**
PO CI6229
Project **090085**
Dated **16/01/2006**
Our Confirmation No. **90187-10**
Customer No. **604861**
Sales Contact **Gérald Gaspoz**
41 27 457 65 43
Certificate Dpt : **41 27 457 68 15/6**

**Aluminium Plate AA6061-T651, mill finish, slightly oiled,
To AMS QQ-A-250/11, ASTM B209-02a, ASME SB209-04 and SIE0001-02
Alumitex paper interleaved**

Your article : **PO CI6229 / 6061-T651**

Lot	Production No.	Weight	Quantity	Dimensions
J05251	6150598	2420.64 Lbs	1	2.000" x 84.00" x 144.50"

Mechanical and technological properties

Sample	Tempe	Psi-UTS	Psi-YS	A%2Inch	HB
min-max	T651	>=42000	>=35000	>=8	
min-max					

Measured values

1	T651	46300	40800	13	102
2	T651	46300	40500	14	102

CERTIFICATION

SOLD TO:	
DATE:	
CUSTOMER P.O.:	
CUSTOMER PN.	
ATTN:	
QUANTITY:	
BY:	
THYSSEN CUPPER & BRASS SALES INC.	

Chemical composition

Required composition (% by weight)

Casting No	Si	Fe	Cu	Mn	Mg	Cr	Ni	Zn	Ti
Min	.40		.15		.8	.04			
Max	.8	.7	.40	.15	1.2	.35	.05	.25	.15

Analysis results (% by weight)

60602261	0.63	0.39	0.24	0.04	0.96	0.21	0.0025	0.011	0.018
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Remark

Definition of abbreviations on demand

MAY 03 2006

A. Eden
Inspection Department
Valid without signature 01



02002020

Alcan Aluminium Valais SA

CH-3960 Sierre
Suisse

ALCAN ROLLED PRODUCTS

Tel : +41(0) 27 457 51 11
www.alcan.com



PECHINEY WORLD TRADE USA

333 LUDLOW STREET

US -06902 STAMFORD

INSPECTION CERTIFICATE

According To **EN 10204-3.1**
Disp. Advice / Cert **0080137719**
Date **28/02/2006** Page **1**

Your Order **Copper and Brass Sal**
CI2584
Project **PNR 090085**
Dated **19/12/2005**
Our Confirmation No. **89687-10**
Customer No. **604861**
Sales Contact **Gérald Gaspoz**
41 27 457 65 43
Certificate Dpt : **41 27 457 68 15/6**

Aluminium Plate AA6061-T651, mill finish, slightly oiled,
To AMS QQ-A-250/11, ASTM B209-02a, ASME SB209-04 and SIE0001-02
Alumitex paper interleaved

Your article : PO CI2584 / 6061-T651

Lot	Production No.	Weight	Quantity	Dimensions
J03579	6149051	4175.49 Lbs	2	2.000" x 72.50" x 144.50"

Mechanical and technological properties

Sample	Tempe	Psi-UTS	Psi-YS	A%2Inch	HB				
min-max	T651	>=42000	>=35000	>=8					
min-max									

Measured values

1	T651	47500	41800	14	100				
2	T651	47500	41800	14	101				

CERTIFICATION

SOLD TO:

DATE:

CUSTOMER P.O:

CUSTOMER PN:

ATTN:

QUANTITY:

BY:

THYSSEN COPPER & BRASS

Chemical composition

Required composition (% by weight)

Casting No	Si	Fe	Cu	Mn	Mg	Cr	Ni	Zn	Ti		
Min	.40		.15		.8	.04					
Max	.8	.7	.40	.15	1.2	.35	.05	.25	.15		

Analysis results (% by weight)

60393311	.61	.36	.24	.07	.91	.21	.0028	.015	.019		
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Remark

Definition of abbreviations on demand

APR 17 2006

A. Eden
Inspection Department
Valid without signature 01

